

Listing of the Claims:

Claims 1-6 (Canceled).

Claim 7 (Currently Amended): A device for monitoring an area of coverage around a working tool comprising:

at least one camera;

at least one computer unit that is coupled to the at least one camera and at least one switching output that is coupled to the working tool, said switching output having means, integrated into the at least one computer unit, for storing and classifying a reference background, wherein the reference background is an image, recorded with the at least one camera, of an object-free security zone within the area of coverage;

means for checking the reference background with respect to non-homogeneity,
wherein the reference background is rejected as non-valid only if the non-homogeneity
detected within a predetermined variance distance falls below a predetermined level and
the reference background is otherwise classified as valid;

means, integrated into the at least one computer unit, for releasing an object detection system in dependence on the classification of the reference background; and

means, integrated into the computer unit, for comparing actual images of the security zone, recorded with the camera and a reference background classified as valid, wherein a detection of a safety-critical object within the security zone occurs if the actual image differs significantly from the reference background and wherein the working tool is activated via the switching output that is triggered by the computer unit, but only if no safety-critical object is located within the security zone.

Claim 8 (Original): The device according to claim 7, wherein a binary control signal having switching states is generated in the at least one computer unit, the switching states of which indicate whether the existing reference background is classified as valid or non-valid.

Claim 9 (Original): The device according to claim 8, wherein the object detection system is released or blocked in dependence on the switching states of the binary control signal.

Claim 10 (Original): The device according to claim 8, wherein the switching states of the binary control signal can be output via an indicator output that is coupled to the at least one computer unit.

Claim 11 (Original): The device according to claim 10, wherein the device is provided with two cameras, which form a redundant camera system, onto which a beam divider projects images of the area of coverage.

Claim 12 (Original): The device according to claim 11, wherein this device comprises two computer units, one respective computer unit being associated with one of the cameras for evaluating the image information recorded therein and wherein both computer units are coupled so as to perform mutual checks.

Claim 13 (Original): The device according to claim 12, wherein the switching output is actuated by both computer units.

Claim 14 (Original): The device according to claim 12, wherein the indicator output is activated by both computer units.

Claim 15 (Original): The device according to claim 11, wherein the two cameras of the camera system are identical or at least operate in the same way.

Claim 16 (Original): The device according to claim 12, wherein the two computer units have identical hardware structures.

Claim 17 (Original): The device according to claim 12, wherein the two computer units have different software structures.

Claim 18 (Original): The device according to claim 12, wherein the reference background is stored in each computer unit and is checked with respect to its non-homogeneity.

Claim 19 (Original): The device according to claim 18, wherein the object detection system is released via the binary control signal, but only if the reference background in both computer units is classified as valid.

Claim 20 (Original): The device according to claim 12, wherein for the object detection system a comparison is made between the images actually recorded with the two cameras and the reference background is stored in the two computer units.

Claim 21 (Original): The device according to claim 20, wherein image characteristics are obtained for the object detection system in the two computer units from the image information that is input with the aid of the two associated cameras.

Claim 22 (Original): The device according to claim 21, wherein the image characteristics determined in the two computer units are compared via the connection between the two computer units.

Claim 23 (Original): The device according to claim 22, wherein the working tool is shut down via the switching output if the image characteristics detected in the individual computer units do not coincide.

Claim 24 (Original): The device according to claim 22, wherein a working tool is shut down via the switching output if image characteristics assigned to a safety-critical object located in the security zone are detected jointly in both computer units.

Claim 25 (Original): The device according to claim 7, wherein within the area of coverage that is covered by the camera system, at least one warning zone is defined in addition to the security zone, wherein a warning indicator is activated via a warning output if a safety-critical object is located in the warning zone.

Claim 26 (Original): The device according to claim 25, wherein the warning zone is adjacent to the security zone.

Claim 27 (Original): The device according to claim 25, wherein the reference background comprises the security zone and the warning zone.

Claim 28 (Original): The device according to claim 26, wherein the movement direction of a safety-critical object within the warning zone can be detected.

Claim 29 (Original): The device according to claim 28, wherein the warning indicator is activated only if a safety-critical object is located within the warning zone and moves toward the security zone.

Claim 30 (Original): The device according to claim 25, wherein several security zones and warning zones are respectively provided, wherein one switching output is assigned respectively to a respective security zone and a warning output is assigned to each respective warning zone.

Claim 31 (Original): The device according to claim 30, wherein the working tool is shut down if a safety-critical object is located in at least one security zone.

Claim 32 (Original): The device according to claim 7, wherein the working tool is one of a working robot and an assembly robot.

Claim 33 (Original): The device according to claim 7, wherein the working tool is a printing machine.

Claim 34 (Original): The device according to claim 7, wherein the working tool is a feeding device.

Claim 35 (Original): The device according to claim 7, wherein the working tool is a press.

Claim 36 (Original): The device according to claim 7, wherein the working tool is a folding press.

Claim 37 (Original): The device according to claim 7, wherein the safety-critical objects are persons.

Claim 38 (Original): The device according to claim 7, wherein the safety-critical objects are arms of a person.